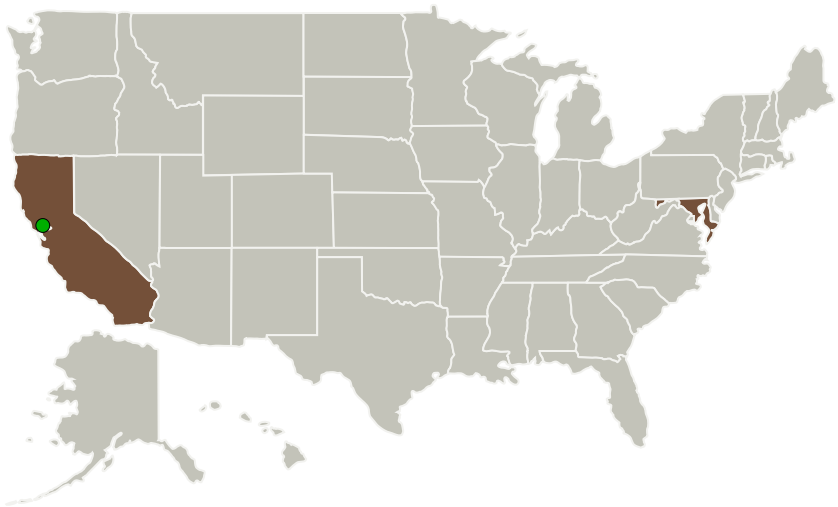
# Uninhabited Traffic Management System Evaluator (UTME), Phase I

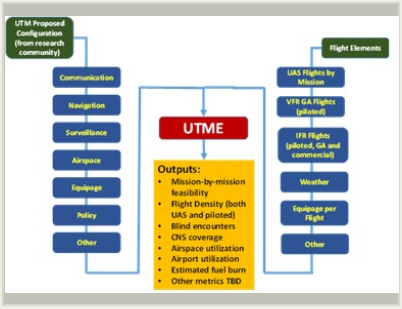
Completed Technology Project (2014 - 2014)

## Project Introduction

The key innovation of this effort is the development of an Uninhabited Aerial System (UAS) Traffic Manager Evaluator (UTME) specifically targeted at evaluating potential air traffic systems for handling low-altitude UAS flights. It has been estimated that over 90% of future UAS flights will be low altitude (less than 6,000 feet above ground level). At such low altitudes, the conventional air traffic management systems are ineffective, primarily because both communication and surveillance coverage is limited at those low altitudes, and communication latencies among the controller, remote pilot, and UAS vehicle will be higher than controllers are accustomed to today. Therefore the current approach of treating low-altitude piloted flights distant from a major airport with Visual Flight Rules (delegating separation to the pilot in visual meteorological condition) may lead to unacceptably low levels of safety (high probability of accidents). In part because of these concerns, NASA is considering developing a low-altitude air traffic control system specifically for UAS flights—what is called here a system for UAS Traffic Management, or UTM. But how should such a UAS Traffic Management (UTM) system be structured? What are the fundamental requirements? How can different proposals for handling such traffic be evaluated? A UTM evaluator, which is the system proposed herein, will help answer these questions.

## Primary U.S. Work Locations and Key Partners






Uninhabited Traffic Management System Evaluator (UTME) Project Image

## Table of Contents

# Uninhabited Traffic Management System Evaluator (UTME), Phase I

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| Organizations Performing Work | Role | Type | Location |
|---|---|---|---|
| Intelligent Automation, Inc. | Lead Organization | Industry | Rockville, Maryland |
| Ames Research Center(ARC) | Supporting Organization | NASA Center | Moffett Field, California |

| Primary U.S. Work Locations | |
|---|---|
| California | Maryland |

## Project Transitions

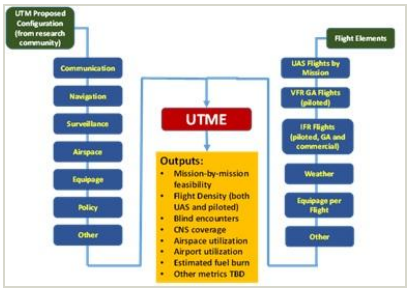
**June 2014:** Project Start

**December 2014:** Closed out

**Closeout Documentation:**

- Final Summary Chart*(https://techport.nasa.gov/file/137736)*

## Images




**Project Image**
Uninhabited Traffic Management System Evaluator (UTME) Project Image
*(https://techport.nasa.gov/image/129668)*

## Organizational Responsibility

**Responsible Mission Directorate:**
Space Technology Mission Directorate (STMD)

**Lead Organization:**
Intelligent Automation, Inc.

**Responsible Program:**
Small Business Innovation Research/Small Business Tech Transfer

## Project Management

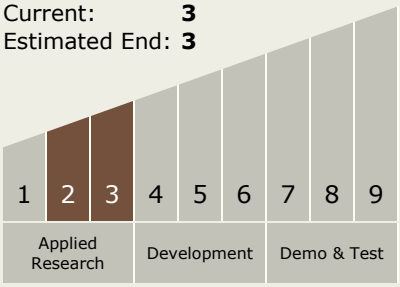
**Program Director:**
Jason L Kessler

**Program Manager:**
Carlos Torrez

**Principal Investigator:**
Frederick Wieland

## Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **3**



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## Technology Areas

**Primary:**

- TX11 Software, Modeling, Simulation, and Information Processing
  - TX11.3 Simulation
    - TX11.3.1 Distributed Simulation

## Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System